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Amendments to the claims

This list of claims will replace all prior versions, and listings of claims in the application:

1(currently amended). A method of detecting double-talk and path changes in an echo cancellation system including a Least Mean Squares adaptive filter for generating an echo cancellation signal, comprising:

generating a cross correlation matrix

$$R = E[xx^T]$$

where E is the statistical expectation operator and

$$X = \begin{bmatrix} X_0 \\ X_1 \end{bmatrix} \text{ where}$$

X_0 is an echo path signal and X_1 is an estimated echo signal generated by said adaptive filter; and

performing a matrix operation on said matrix R to generate a characteristic value determinative of the correlation between said signals X_0 and X_1; and

detecting the presence of double-talk and path changes occurring in said system from said characteristic value.

2 (cancelled).

3(previously presented).   A method as claimed in claim 1, wherein said characteristic value is the determinant of said matrix.

4.(previously presented)   A method as claimed in claim 3, wherein said double-talk and path changes are inferred when said determinant passes predetermined threshold values.

5(withdrawn). A method as claimed in claim 1, wherein said characteristic value comprises eigendecompositions of said matrix.

6(withdrawn). A method as claimed in claim 1, wherein said characteristic value comprises single valued decompositions of said matrix.

7(withdrawn). A method as claimed in claim 2, wherein said characteristic value comprises condition numbers of said matrix.

8(cancelled).

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9(cancelled).

10(previously presented).   A method as claimed in claim 1, wherein said Least Mean Square filter implements a normalized-LMS algorithm.

11(previously presented).   A method as claimed in claim 1, wherein the elements of said matrix are generated in the time domain.

12(withdrawn).   A method as claimed in claim 1, wherein the elements of said correlation-based matrix are generated in the frequency domain.

13(cancelled).

14(cancelled).

15(cancelled).

16(cancelled).

17(cancelled).

18 cancelled).

19 cancelled).

20 cancelled).

21 cancelled). .

22 cancelled).

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